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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/710,892	11/14/2000	Hiroaki ITO	P66074US0	5787

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JACOBSON HOLMAN PLLC  
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EXAMINER
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PATTERSON, MARC A

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 10/03/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/710,892	ITO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Marc A Patterson	1772	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 5/19/03.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other:  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Newly submitted claim 22 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: the claim is directed to a method of producing a fuel hose.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 22 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

### **WITHDRAWN REJECTIONS**

2. The 35 U.S.C. 102(b) rejection of Claims 1, 2, 7 – 9, 14, and 18 – 19 as being anticipated by Yokoe et al (U.S. Patent No. 5,919,326), of record on page 2 of the previous Action, is withdrawn.

The 35 U.S.C. 103(a) rejection of Claims 3 – 6, 10 – 13, 15 and 17 as being unpatentable over Yokoe et al (U.S. Patent No. 5,919,326), of record on page 3 of the previous Action, is withdrawn.

The 35 U.S.C. 103(a) of Claim 16 as being unpatentable over Yokoe et al. (U.S. Patent No. 5,919,326) in view of Murakami et al (Japanese Patent No. 08104805), of record on page 7 of the previous Action, is withdrawn.

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The 35 U.S.C. 103(a) rejection of Claim 20 as being unpatentable over Yokoe et al. (U.S. Patent No. 5,919,326) in view of Stanley (U.S. Patent No. 5,005,613) of record on page 7 of the previous Action, is withdrawn.

## NEW REJECTIONS

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1 – 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. With regard to Claim 1, the phrase ‘one of any material’ is indefinite, because only one material is claimed for the inner layer or multilayer. It is therefore unclear if it is the fluororesin which has the specified density. For purposes of examination, the phrase will be assumed to mean ‘the material.’ The phrases ‘each layer of the inner single or multilayer’ and ‘each layer of the outer single or multilayer’ is indefinite as its meaning is unclear. For purposes of examination, the phrase will be assumed to mean ‘the inner single layer or each layer of the inner multilayer’ and ‘the outer single layer or each layer of the outer multilayer.’

### *Claim Rejections - 35 USC § 102*

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 – 4, 14 and 18 – 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto et al (U.S. Patent No. 5,891,538).

With regard to Claim 1, Yamamoto et al disclose a fuel hose (column 3, lines 10 – 17) comprising an inner layer of a fluororesin and an outer layer of thermoplastic resin (polyamide; column 9, lines 10 – 16 and 58 – 63); Yamamoto et al teach that the melt viscosity of the inner layer is between 10 and 100,000 poise at 250 degrees Celsius (column 4, lines 57 – 64) and the melt viscosity of the outer layer is between 10 and 100,000 poise at 250 degrees Celsius (column 3, lines 47 – 55) the claimed aspect of the ratio in melt viscosity between the two layers being between 1 : 40 or below therefore reads on Yamamoto et al. With regard to the claimed aspect of the layers being formed by co – extrusion, the scope of the claims falls within the limitations of Yamamoto et al as discussed above. The method of making the layers (product – by – process) is given little patentable weight.

With regard to Claims 2 – 3, the fluororesin is an ethylene – tetrafluoroethylene copolymer copolymerized in a molar ratio of 60 : 40 (column 4, lines 46 – 56).

With regard to Claim 4, the copolymer comprises one other monomer comprising propylene (hexafluoropropylene; column 6, lines 49 – 64).

With regard to Claim 14, the thermoplastic resin taught by Yamamoto et al is a polyamide (column 9, lines 10 – 16 and 58 – 63).

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With regard to Claim 18, Yamamoto et al teaches a multilayer hose comprising an olefic thermoplastic elastomer (column 5, lines 15 – 34); the claimed aspect of the outer layer comprising an being an ‘olefic thermoplastic elastomer’ therefore reads on Yokoe et al.

With regard to Claim 19, the outer layer taught by Yamamoto et al is therefore surrounded by a protective rubber layer.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 5 – 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al (U.S. Patent No. 5,891,538).

Yamamoto et al. disclose a fuel hose comprising an inner layer as discussed above. The inner layer is a copolymer of tetrafluoroethylene, hexafluoropropylene and vinylidene fluoride (column 6, lines 49 – 64). With regard to Claims 5 – 6, Yamamoto et al fail to a layer which is formed of tetrafluoroethylene, hexafluoropropylene and vinylidene fluoride copolymerized in a molar ratio 40 to 85 : 5 to 20 : 5 to 55. However, Yamamoto et al disclose a layer which is formed of tetrafluoroethylene, hexafluoropropylene and vinylidene fluoride copolymerized in a molar ratio 33.3 : 33.3 : 33.3 (column 6, lines 49 – 64).

Therefore, the molar ratio would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end use of the product. It therefore

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would be obvious for one of ordinary skill in the art to vary the molar ratio, since the molar ratio would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end result as shown by Yamamoto et al, in the absence of unexpected results. *In re Boesch and Slaney*, 205 USPQ 215 (CCPA 1980).

9. Claims 7 – 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al (U.S. Patent No. 5,891,538) in view of Yokoe et al. (U.S. Patent No. 5,919,326).

Yamamoto et al. disclose a fuel hose comprising a fluororesin inner layer and an outer layer as discussed above. With regard to Claims 7 – 8, Yamamoto et al fail to disclose an inner layer comprising an electrically conductive material.

Yokoe et al teach a fuel hose (column 1, lines 19 – 21) comprising a fluororesin inner layer comprising carbon black, which is an electrically conductive material, and an outer layer, for the purpose of dissipating static charge (column 5, lines 19 – 35). The desirability of providing for carbon black in Yamamoto et al, which is a fuel hose, would therefore be obvious to one of ordinary skill in the art.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for carbon black in Yamamoto et al in order to dissipating static charge as taught by Yokoe et al.

With regard to Claim 9, the fluororesin taught by Yokoe et al has a resistance (volume resistivity) not exceeding  $10^{10} \Omega\text{cm}$  (column 5, lines 19 – 35).

10. Claims 10 – 13, 15, 17 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al (U.S. Patent No. 5,891,538) in view of Spohn (WO 98/05493).

Yamamoto et al disclose a hose comprising a fluororesin as discussed above. With regard to Claim 21, the fluororesin is a copolymerizate of a fluororesin with a monomer comprising a monocarboxylic acid (therefore an unsaturated monocarboxylic acid; column 7, lines 65 – 67; column 8, lines 1 – 17 of Yamamoto). With regard to Claim 10, Yamamoto et al. fail to disclose a fluororesin which contains a reactive functional group consisting of  $\text{CF}_2=\text{CFOCF}_2\text{CF}(\text{CF}_3)\text{OCF}_2\text{CF}_2\text{COOH}$ , formed by copolymerizing the fluororesin with an unsaturated monocarboxylic acid containing fluorine.

Spohn teaches the use of a fluororesin layer containing a reactive functional group (it is adhesively activated by having a compound grafted thereto which imparts polar functionality (page 7, lines 8 – 35), for the purpose of producing a fuel hose which has an excellent chemical resistance (page 1, lines 8 – 24 of Spohn).

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for a fluororesin layer containing a reactive functional group in Yamamoto et al. in order to produce a fuel hose which has an excellent chemical resistance as taught by Spohn.

With regard to Claims 11 – 13, the reactive group is  $\text{CF}_2=\text{CFOCF}_2\text{CF}(\text{CF}_3)\text{OCF}_2\text{CF}_2\text{COOH}$ , and is therefore a carboxyl group (page 7, lines 8 – 35 of Spohn); the reactive functional group is therefore formed by copolymerizing the fluororesin with an unsaturated monocarboxylic acid containing fluorine.

With regard to Claim 15, Yamamoto et al. fail to disclose a polyamide layer which comprises the modification of the carboxyl groups of the polyamide with amino groups resulting in amino groups in the amount of  $1 \times 10^{-5}$  gram – equivalent per gram.



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Spohn teaches the modification of the carboxyl groups of a polyamide layer of a fuel hose with amino groups (excess diamine is added to provide an excess of amine end groups over carboxyl end groups; column 3, lines 27 – 34 of Spohn) for the purpose of producing a fuel hose which has an excellent chemical resistance (page 1, lines 8 – 24 of Spohn).

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for the modification of the carboxyl groups with amino groups in Yamamoto et al. in order to produce a fuel hose which has an excellent chemical resistance as taught by Spohn.

With regard to Claim 17, Spohn teaches a modification resulting in amino groups in the amount of  $1 \times 10^{-5}$  gram – equivalent per gram (an excess of amine end groups over carboxyl end groups; column 3, lines 27 – 34 of Spohn).

Thus, one of ordinary skill in the art would have recognized that the number of amino groups in the polyamide would be readily determined through routine optimization depending on the desired end results as shown by Spohn.

Therefore, it would be obvious for one of ordinary skill in the art to vary the number of amino groups in the polyamide, since the number of amino groups would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end result. *In re Boesch and Slaney*, 205 USPQ 215 (CCPA 1980).

11. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al (U.S. Patent No. 5,891,538) in view of Murakami et al (Japanese Patent No. 08104805).

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Yamamoto et al disclose a fuel hose comprising an inner layer of a fluororesin and outer layer of polyamide as discussed above. Yamamoto et al fail to disclose a polyamide containing a diazabicycloundecene salt.

Murakami et al teach the addition of a diazabicycloundecene salt to the polyamide layer of a multilayer hose, for the purpose of increasing the interlaminar adhesion strength (Abstract).

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for a diazabicycloundecene salt in Yamamoto et al in order to increase the interlaminar adhesion strength as taught by Murakami et al.

12. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al (U.S. Patent No. 5,891,538) in view of Stanley (U.S. Patent No. 5,005,613).

Yamamoto et al disclose a fuel hose comprising an inner layer of a fluororesin and outer layer of polyamide as discussed above. Yamamoto et al fail to disclose a fuel hose which is corrugated.

Stanley teaches the corrugation of a fuel hose for the purpose of improving the flexibility as compared to a smooth hose (column 1, lines 62 – 68; column 2, lines 1 – 9).

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for corrugation in Yamamoto et al in order to improve the flexibility as taught by Stanley.

## ANSWERS TO APPLICANT'S ARGUMENTS

13. Applicant's arguments regarding the 35 U.S.C. 102(b) rejection of Claims 1, 2, 7 – 9, 14, and 18 – 19 as being anticipated by Yokoe et al (U.S. Patent No. 5,919,326), 35 U.S.C. 103(a) rejection of Claims 3 – 6, 10 – 13, 15 and 17 as being unpatentable over Yokoe et al (U.S. Patent No. 5,919,326), 35 U.S.C. 103(a) of Claim 16 as being unpatentable over Yokoe et al. (U.S. Patent No. 5,919,326) in view of Murakami et al (Japanese Patent No. 08104805), and 35 U.S.C. 103(a) rejection of Claim 20 as being unpatentable over Yokoe et al. (U.S. Patent No. 5,919,326) in view of Stanley (U.S. Patent No. 5,005,613), of record in the previous Action, have been considered and have been found to be persuasive. The rejections have therefore been withdrawn above. The new 35 U.S.C. 112 second paragraph rejection of Claims 1 – 21, 35 U.S.C. 102(b) rejection of Claims 1 – 4, 14 and 18 – 19 as being anticipated by Yamamoto et al (U.S. Patent No. 5,891,538), 35 U.S.C. 103(a) rejection of Claims 5 – 6 as being unpatentable over Yamamoto et al (U.S. Patent No. 5,891,538), 35 U.S.C. 103(a) rejection of Claims 7 – 9 as being unpatentable over Yamamoto et al (U.S. Patent No. 5,891,538) in view of Yokoe et al. (U.S. Patent No. 5,919,326), 35 U.S.C. 103(a) rejection of Claims 10 – 13, 15, 17 and 21 as being unpatentable over Yamamoto et al (U.S. Patent No. 5,891,538) in view of Spohn (WO 98/05493), 35 U.S.C. 103(a) rejection of Claim 16 as being unpatentable over Yamamoto et al (U.S. Patent No. 5,891,538) in view of Murakami et al (Japanese Patent No. 08104805) and 35 U.S.C. 103(a) rejection of Claim 20 as being unpatentable over Yamamoto et al (U.S. Patent No. 5,891,538) in view of Stanley (U.S. Patent No. 5,005,613) above are directed to amended Claims 1 – 20 and newly submitted Claim 21.


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***Conclusion***

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc Patterson, whose telephone number is (703) 305-3537. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by phone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached at (703) 308-4251. FAX communications should be sent to (703) 872-9310. FAXs received after 4 P.M. will not be processed until the following business day.

Marc A. Patterson, PhD.

*Marc Patterson*  
Art Unit 1772

  
HAROLD PYON  
SUPERVISORY PATENT EXAMINER  
*1772* *9/20/03*